RESEARCH PROJECTS UNDER CONSIDERATION
2000 UTRAC WORKSHOP

Group 1 - Construction & Maintenance

1-1 Equipment purchasing and useful life
1-2 implementing Real-Time Avalanche Detection and Alarm System
1-3 Method to lower vehicle speed both in work zones and non-work zone major urban arteries
1-4 Developing geophones as avalanche detection sensors
1-5 Protecting new concrete structures through use of sealants

Group 2 - Materials & Pavement

2-1 Implementation of automated distress data collection system developed by Dr. Heng Da Cheng
2-2 Feasibility Study of ground penetrating radar for network level pavement thickness measurement.
2-3 Implement non-destructive methods of pavement evaluation & testing
2-4 Methodology and protocol for construction and maintenance data
2-5 Continuous pavement deflection testing
2-6 Process of annual statewide distress collection by UDOT personnel

Group 3 - Hydraulics, Environmental, Landscape & Roadway

3-1 Preparing UDOT to meet current and future stormwater management requirements.
3-2 The effects of highway crossings on stream ecology and riparian wildlife
3-3 The effects of large diameter culverts with shallow cover on the useful life of pavement structures
3-4 Simplify design discharge calculations
3-5 Economical and efficient methods of scour countermeasures at bridges

Group 4 - ITS, Planning, Traffic & Safety

4-1 Adaptive signal control for downtown SLC and Fort Union area
4-2 Improving the safety of pedestrian crossings on major arterials
4-3 Determine surface street LOS using existing detector infrastructure
4-4 Develop evaluation and data collection plan for ATMS Phase 2 Deployment Benefit Study
4-5 Evaluating the effectiveness of “dancing diamond” as an early work zone warning device

Group 5 - Geotechnical & Structures

5-1 Design guidance for developing surface response spectra and liquefaction remediation criteria for soft soils with Legacy Highway as an example
5-2 Coordination of strong ground motion instrumentation deployment with U of U seismostation
5-3 Evaluation of sample disturbance from Shelby tube versus piston samplers
5-4 Development of a composite isotruss freeway sign
5-5 Use of TDR (Time Domain Reflectometry) for responsive landslide monitoring